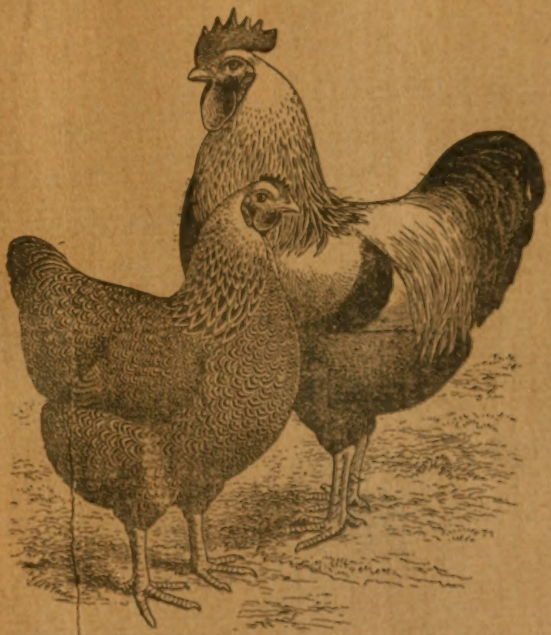
THE NARSH POULTRY SYSTEM



HOW TO GET A HANDSOME INCOME FROM 20 FEET SQUARE OF GROUND

PRICE $1.00

By I. M. NARSH, Inventor and Publisher
OKLAHOMA CITY, OKLA.

SF 487
.N3
Copy 1

The Narsh Poultry System

By J. M. NARSH, Inventor and Publisher

PRICE $1.00

Big Profit in Raising Chickens

HOW TO GET A HANDSOME INCOME FROM TWENTY FEET SQUARE OF GROUND

The Purchasers of this book are given the right to make and use any and all appliances herein contained. Owners of the book may employ others to make tne appliances; bnt persons who do not own the book have no right to use the appliances or the system.

SF487
.N3

BURNETTE PRINTING COMPANY

NO 10 NORTH BROADWAY, OKLAHOMA CITY, OKLA.

©CLA275611

THE NARSH POULTRY SYSTEM

The publication of this book is for the purpose of giving a full description of my system of coops, brooders, feeders and appliances and the best known methods, that have been proven by actual practice, for the successful profitable raising of poultry. These pages will treat of the feeding and care of the chicks from the moment they leave the egg, and if the methods herein set forth are carefully followed, the reader can feel safe in his anticipation of success.

We have given the system a thorough trial, and know that our system can be and has been made a success, either on the farm or on a city lot. It will no doubt surprise the reader to know that $2,000 per annum can be made on 20 feet square, producing chickens that will bring from one to three cents above the market price; yet the facts are that under this system even greater results are being attained.

Two-pound broilers are being produced in seven to eight weeks, bringing from 40 to 50 cents apiece, and broilers raised under this system always find a ready market.

It will be still more surprising to know that under this system a single hen will produce $25 worth of broilers in a year, and they are even doing better than that. A good hen will produce 150 eggs a year, and, if properly fed, 90 per cent of the eggs will hatch, making 135 chicks; and under this system 90 per cent will be raised, making fully 120 broilers. The reader can figure out what a 150 egg hen will produce. Hens properly bred and cared for under this system will produce 150 eggs a year.

It would be foolish for us to contend that our system has reached perfection, or that there is virtue in no other. But the reader will be quick to see, after having perused these pages, and studied our plans of construction, that this system of caring for poultry is a long step in advance of others, and the fact that well known poultry men of years' experience are quick to see its advantages is by no means a small factor in proving our assertions. We acknowledge that our system is in many respects a direct contradiction of the teaching of many leading poultry men. But if by contradiction one may transplant a five-acre poultry farm from the country to his back yard in the city, overcome losses and increase production, and give to the consuming public a product that is free from every taint of disease—then why stick to the old?

It is true that with his wooden plow and other crude instruments of agriculture the farmer of long ago eked out his livelihood, but nevertheless he has seized hold of every improvement, substituting the horse for the ox, then the steam engine for the horse, then the electric motor for the steam, until now at his own will he makes the countless acres to yield their abundance.

The Narsh System has done away with closed chicken houses, with their mites and lice and stagnant air and disease breeding fumes. It has put the fowls out of reach of rat or cat or hawk or flood. It has made useless artificially heated and injurious brooders. It has reduced disease to the minimum and made it easily controlled. It has made the raising of various breeds possible in a small space, yet keeping them always separate and therefore pure. It has made it possible for the poor man to become independant, and for the struggling

poultryman of the "old school" to make a profit for his labor.

The full system and how to obtain these results are fully set forth in the pages of this book.

$2,000 MADE FROM 100 HENS ON 20 FEET SQUARE SPACE.

It has been the ambition of the writer for many years to devise a system by which poultry can be raised and be made profitable. This required a careful study of each obstacle and how to overcome it by a system that will meet all requirements both in the country and in the thickly populated cities where dogs, cats and rats are very destructive to poultry raising, often destroying whole broods of chickens in a single night. Also the annoyance of chickens to the neighbors, often causing bad feeling, by chickens destroying shrubs, flowers and other plants. Other obstructions were mites and lice, which are destructive and seemingly prohibitory to successful poultry raising in the city at a profit.

Yet all of these have been overcome by my new system. It has been the prevailing theory that chickens must have a large range to do well and to go into the poultry business you want to get to the outskirts of town, purchase a farm of from one to five acres of land, then erect suitable buildings and other equipment believed to be necessary to make poultry raising profitable. All of which is a mistake. You can do a profitable poultry business in one corner of your city lot, which can be made far more profitable than the one or five-acre tract, under this system.

It is a known fact that a hen will do her best when confined to a small space if the necessary conditions exist. These conditions are pure air, plenty of light, protection from lice, mites and other parasites; also protection from injury by quadrupeds, dampness and cold, all of which is overcome in this system.

It is a rare thing to get over 25 eggs a day from 50 hens where they are kept in one flock, while it is not a rare thing to get 5 and even 6 eggs from six hens where only six hens are kept in a flock. Under this system 100 hens can be kept—6 hens and one cockerel in a flock. On 10 feet square and with an additional 10 feet square for raising broilers, $2,000 can be made per year. This system is a unit system and can be started with the smallest unit and does not require a college graduate to operate the plant. Any person of ordinary ability can operate this system profitably.

You do not need to give up your present business or position to thoroughly test this system. You can purchase from some one 10 or 12 chicks just hatched which often can be purchased for 5 or 10 cents apiece. Be sure to get those that are of good breeding. If you can make 2-pound broilers from them in eight weeks, you may feel sure you have mastered the system of raising broilers and you will be safe to carry the plant to the desired size. If you have not obtained these results, something is wrong. You then have the chance to study over the system and find what has been omitted or what conditions caused the failure. You can then start with another unit. If this system is fully carried out you will be safe to make the plant as large as desired in the beginning.

All parts of the poultry business, from securing hatchable eggs to the marketing of the poultry is set

forth in this system, giving the best known methods.

The writer has carefully considered the matter of economy in appliances, also in labor-saving in the care of the poultry. A woman can care for a plant of 50 or 60 hens or even 100 hens by the assistance of her husband a few minutes night and morning.

DON'T JUMP AT CONCLUSIONS.

If one should try to follow the dictate of every writer as to how to do this and that, one would be everlastingly "in hot water," almost every succeeding day contradicting and destroying the work of the previous one. Because one has tried an experiment and achieved a seeming success, it is hardly wise to jump at conclusions and base all future plans on this one success. A lady friend not long since had a hen which stole its nest in the weeds and brought off 15 chicks, without losing an egg. At the same time a hen set in the barn came off with very poor success. Hence the good lady reasoned that the ground was the proper place for setting hens. The result was, as any experienced poultry raiser knows—a distinct failure. It happened that at the time the first hen set the ground was exceedingly dry, while at the next setting it was damp—a condition fatal to the hatch.

Every method set forth in this book has been thoroughly tested under varying conditions extending over several years' experience; and while in some instances conditions might add to or detract from the success of certain ones who adopt our system, yet we are

free to say that with a reasonably close adherance to the system herein outlined there need be little cause for failure.

SOUTHWEST FOR POULTRY.

Poultry thrives in the southwest, the climate being dry and the air dry and pure. The insect life is more plentiful in the south and west than in the north and east. The cold dampness of the latter is destructive to the insect life and the injury to the poultry by lice and mites is less. And on the other hand, the same cause, that is, excessive cold and dampness, injures the fowls.

This should convince us that in a country where such insects thrive the natural conditions are ideal for poultry.

Lice and mites must have a dark place to breed, excluded from circulating air. I ask my reader to bear this in mind when examinging my system. No lice or mites exist under my system and I feel with these removed I can rightfully call this country the Poultry Eden.

COST OF EQUIPMENT COMPARED WITH OTHER METHODS.

The first cost of the Narsh system is from 10 to 25 per cent cheaper than any system I know anything about, and I think I am pretty well posted on the different poultry systems that have become popular.

My second saving is in labor in giving the fowls proper care. This saving is at least 50 per cent.

WHY MIDDLE-AGED MEN SHOULD START IN THE POULTRY BUSINESS.

It is a known fact that the large employe s and corporations have established the age rule. When a man has reached or passed the middle age of life he is to a large extent crowded out, or in other words, has difficulty in securing employment.

The railroad companies want young men; the street railways want young men; express companies want young men; the manufacturers want young men; and the result is that the middle-aged man that must depend upon his wages for a livelihood is forced to take employment too heavy and hard for his deteriorated strength. To the middle-aged man I would advise, get into the poultry business. You can easily get a start of poultry and by so doing you can soon have a nice little income and a growing business.

The trusts cannot monopolize the poultry business. They have the control of beef and pork, but they cannot monopolize the hen or her product. There is a ready market every day in the year for the poultryman's product. The experimental stations have proven that it costs no more to produce a pound of poultry than it does to produce a pound of pork or beef and the poultry will bring nearly double as much per pound. And again, it takes too long a time for a man of limited means to get returns from beef or pork . You can start in the poultry business with three birds and at the end of the first season you can have 25 or 30 pullets and a number of cockerels. Pullets raised by the Narsh System will produce eggs when five or six months old. The second year you can have at least 100 laying pullets to start the third season.

Your roosters can be marketed when 8 weeks old, giving you an income during the time you are raising your utility hens the third year. With 100 hens you can make a clear profit of 2,000 dollars, and at the same time double your number of laying hens. If you follow the Narsh System you will get these results.

GET INTO A GROWING BUSINESS.

One great secret of success in any line of business is to get into a growing business. The poultry business is growing now a it never did before. It is absolutely certain to keep on growing for many years. The country is becoming more thickly populated all the time, and the chance to raise the larger food animals is growing smaller. This leaves an opening for poultry which must be filled by increasing the number of fowls kept in the country. In all the older countries poultry-keeping has become one of the great industries. The flesh of fowls has always been considered more dainty and toothsome than that of cattle or swine, and the demand for it grows rapidly in every country as soon as it becomes filled up with well-to-do people.

All things considered, the broiler business is a most profitable one for the capital invested, and it can be operation on either a large or small scale and on the farm or in the towns. It also has the advantage of being light work, which anyone can do, and this accounts for so many women members of families making a success of it.

The question as to whether broiler raising pays or not has been thoroughly settled in the affirmative. The large broiler plants that continue to flourish throughout the country is abundant proof that the business pays. It

can be started with a small capital, and if properly managed there is no business that presents to those of moderate means a better prospect than that of "broiler raising." It has made men and women prosperous and happy, and for the same reasons as those advanced elsewhere in this booklet, you should start in the broiler business.

POULTRY MORE PROFITABLE THAN OTHER STOCK

It has been proven that it does not cost any more to produce a pound of pure-bred poultry than it does to produce a pound of pork or beef. I do not need to tell the intelligent reader that poultry always sells for more, pound for pound, than does either pork or beef. A pound of poultry yields the producer about twice the clear profit that is realized from the production of pork and beef. This has been definitely settled by careful experiments at one of our big experiment stations.

The flocks of hens in our country are turning a billion dollars' worth of products over to their owners every year and the little poultry business is a pretty big thing when you come to look up the figures. The poultry business of this country is a thousand times bigger than it was thirty years ago. Any business which has kept right on growing every year for thirty years at the rate of 30 per cent a year, is worth thinking about. The poultry business grows because it furnishes men, women and children with food and the more people there are in a country, the more demand there is for food products of all kinds. Every year the proportion of people in towns and cities increase and these non-producers keep competing with each other in their demand for food, so meat, poultry and

eggs keep raising in prices all the time. The more workmen in the factories, the more eggs and poultry are needed to supply them.

Poultry is no longer a luxury. It is one of the staple foods of our people. The present standard of living calls for eggs at least one a day and the workingmen of the country live up to the standard.

Why, the poultry keepers of this country could pay every old soldier his pension and not miss it. They would only need to give up less than one-sixth of the money they get for poultry and eggs to do it.

The poultry business is something to be proud of and to keep in mind because it is coming on more rapidly than any other business on earth.

Thousands of people are today making a comfortable living and many have become independent by raising poultry and eggs for market. Yet poultry is always worth more per pound than any other meat, and sells just as readily.

Repeated experiments have shown that it costs something less than six cents a dozen to produce eggs. During late years, eggs have never been so low as the cost price. There has been a steady increase in the price of eggs ever since cold storage has been used to keep summer eggs over for winter use. When eggs can be produced at six cents or less a dozen and sold for fifteen to twenty-five cents or more it does not require any argument to show that they are very profitable.

With modern methods for keeping eggs over from the warm season when they are plentiful, to the cold season, when they are scarce, there is not the least danger that the market will ever become overstocked. In fact, this

country could use four times as many eggs as are now produced without glutting the market.

It is a well established fact that there is money in poultry. There are many men and women who are making it pay big. There are thousands more who are making money out of the business conducting it as a side line. many of them making $300 to $1,000 a year and more and they devote only a small share of their time to the business. What others have done others may do. Why not you?

FIRST STEPS.

One of the most essential steps in any business is to start right. The way to start right in the poultry business is to get a good breed. We do not attempt to point out any particular breed, as there are many reliable ones that will produce good results. We will only give the system, leaving the selection of breeds to the fancy of the poultryman.

If you are breeding for broilers, select the best stock you can get of two good breeds, then cross the two breeds. This gives you a start of breeds which you are sure are not related. Then the second cross should be made between the offsprings of the first breeding, or, in other words, mate the first cousins. This is not considered inbreed. And now you must use your best judgment in your selection of utility breeders. The most active pullets—the ones first to their feed and that have their crops well filled at night—will make the best breeders. They are almost sure to be the ones first to develop, although they will not be the largest when fully matured, and will produce the largest number of eggs. The less

active pullets will be found to come to maturity more slowly, will likely be the largest of the breed, and will produce a smaller number of eggs, which will be larger. The slower maturing pullets build up a large frame, making them slower to commence producing eggs.

The earliest matured pullets should be mated with the strongest cockerels of their first cousins, while the slower maturing pullets should be mated with the earlier maturing cockerels.

This method of crossing breeds for broilers does not, of course, produce a pure breed, but while it makes desirable fowls for the market, it at the same time protects the pure bred stock from indiscriminate sale. The cockerels can be replaced in its own brood and the pure stock raised. For instance, a Barred Rock cockerel crossed with a Rhode Island Red will produce an early maturing broiler, then the Barred Rock can be replaced in its own pen and after the sixth days' mating you will have thoroughbreds again.

In breeding for egg producers, equal care should be used in selecting the stock. Hens laying the smaller eggs will produce the largest number in a given length of time, but will not be the best for producing broilers.

The breeder should bear in mind that wonderful changes can be made in the way of breeding. Setters can be made of non-setters, and non-setters made from setters. And the same results may be obtained regarding egg production.

If you start with stock that has good breeding a few generations will make wonderful changes. A hen will produce her equal or better along the line for which you are breeding, but if your stock is not well bred to start with, a hen will not be apt to produce her equal in offspring.

BEST AGE FOR BREEDERS.

Many writers claim that two years old is the best age for breeders. This may be true of some of the larger breeds which are slow to mature, but it will be found that breeds that are fully matured at one year old, both hens and cockerels, will do their best at one year old.

SELECTING PULLETS FOR BREEDING BROILERS AND CAPONS.

Select pullets which have a large craw and have it well filled at night. The large craw shows that it eats plenty of roughness or bulky food, and its eggs will produce a stronger and larger chicken than a pullet with a smaller craw, though well filled. Bulky food will be more apt to produce eggs that will hatch than will fatty food. The pullets should be selected from chicks that were hatched in the winter. You will then be sure they are produced by winter layers, and if this is done you will soon find that in a short time it will be as natural for your hens to lay in winter as for spring and summer hatched to lay in summer.

The best strains for broilers will be produced by breeding full-bloods that are nearest of a size. For an example, the Leghorn crossed with the Brahma would not make a strain that would equal one bred from Minorcas and Plymouth Rocks, the latter being nearer of a size and shape to start with, while the first named would take several generations to produce a uniform strain.

Many times it will be found cheaper to purchase eggs to start a good breed, as they generally can be purchased for from three to five dollars per setting. In

case eggs are used for a start, arrangements should be made for the hatching before the eggs are purchased.

BROILERS RAISED BY THE NARSH SYSTEM.

Where chickens are raised on the range they are constantly chasing insects. They eat many poisonous bugs and worms which causes them to take bowel trouble. This causes the chicken to stand still as far as growth is concerned, and if at the end of several months the chick has reached broiler size, it is not a healthy looking chicken and the flesh will be found nearly as tough as an old fowl.

Lovers of chicken soon learn this and such chickens find a slow market and a low price. People often go to market for chickens and if the chicken found doesn't look very appetizing, they return with a beef or pork steak

Chickens raised under the Narsh System will grow from the day they are hatched. They get no backsets from being chilled or from bowel trouble, but are pictures of health. Their flesh is as tender as a squab, and often bring full broiler price when only six and seven weeks old. These are the kind I am raising and the kind you can raise under the Narsh System.

HOW TO FEED BREEDERS IN ORDER TO SECURE EGGS THAT WILL HATCH.

The morning feed should be a mixture of wheat, bran and corn meal. Wet with sweet skim milk, season with salt and pepper, about as food should be seasoned for the table, using two-thirds wheat bran and one-third cornmeal, feeding such quantities as will be quickly

eaten up. The second feed should be lean meat scraps; no fat of any kind should be fed, as the fat will injure the hatching qualities of the eggs.

Alfalfa meal or ground clover should be fed and may be mixed with the early morning feed. Oats and dry wheat bran should be kept before them all the time. When the alfalfa meal can be had hens should have all they will eat. If the alfalfa cannot be had, then cut or ground clover will answer. A small piece of sprouted oats sod should be fed each day. Green cut bone may be fed where the fatty substance is absent, or it may be burned and ground. Ground oyster shells are preferable. Hens should be supplied with plenty of grit, either gravel or chat. Plenty of pure water should be kept before them at all times. If the water is cut off the egg yield will cease at once, as eggs are composed largely of water.

Laying hens should be fed all they want to eat. It is a mistake to think that hens will get too fat to produce eggs. If fed the proper material for making eggs, the eggs will be made. For example, if a hen is fed on a diet of corn alone, it is impossible for her to produce eggs, as the corn does not contain the necessary elements. The result is, the hen will become very fat. Eggs are composed of different mineral substances as well as cereals.

FERTILITY.

Three days after mating, eggs usually will be fertile; but if the mating has been changed, the first six eggs will be apt to show traces of either mating. After two weeks you will be sure to get results from the last mating only.

It has often been found that well fertiled eggs do not produce chicks; the chicks may be matured and die in the shell. This is sometimes caused from improper incubation, but in nearly every case the fault lies in the feeding of the hen. Too much fatty food has been fed and not enough bulky food. For this reason, prepared food sold on the market should not be relied on, even where meat and bone is ground in butcher shops and sold for chicken feed, as there is very apt to be fat in the meat scraps, and a very small amount of marrow, which is inside of many bones will destroy the hatching ability of the eggs.

Sweet milk should be fed where it is possible to get it at not too great a cost, always removing the cream before feeding. If this system is practiced your eggs will hatch. In some tests at the Virginia Experiment Station the following results were obtained: In a test of 122 days, 22 hens were fed with skim milk, laying 1214 eggs, as against 996 laid by 22 hens fed a mash wet with water. In a test covering 37 days, 60 hens laid 862 eggs on a skim milk diet, while a like number fed no skim milk laid 632 eggs. Other experiments conducted showed similar results. The station, from these tests, estimates that when eggs are worth 20 to 25 cents per dozen, skim milk has a feeding value of 1 1-2 to 2 cents a quart.

MATERIAL WHICH COMPOSES THE EGG.

A hen's egg of good size will weigh 1000 grains, of which the white constitutes 600, the yolk 300, and the shell 100. Egg shell is a membrane, coated with carbonate of lime, and forms 10.7 parts of the egg; 11.9 parts albumen; 12.8 parts fat; 7 parts salt, and 68.9 parts water.

The hen must have food containing these ingredients in order to produce eggs. The carbonate of lime is found plentifully in oyster and clam shells, also the salt albumen from oats, wheat, rye, and many other small grains; while corn and meat supply a greater part of the fat.

A poultry man who would be successful should post himself thoroughly on grain and vegetable matter, as this will aid very materially in his selection of food for his hens. Hens may be rightfully called an "egg machine," and, like other machines, must be furnished with the right material in order to turn out the finished product.

CARE OF EGGS TO BE INCUBATED.

It is always best to set the eggs as soon as possible—the same day as they are laid is best. Yet they can be kept in good condition for one or two weeks and even longer. For best results, however, the sooner they are set after hatching, the better.

The evaporation of the moisture commences at once, and will take with it some of the necessary material required to grow a strong chick. This evaporation continues from day to day until the egg becomes worthless for hatching.

Fresh eggs, in a properly constructed incubator, will not need to be supplied with artificial moisture. When artificial moisture is supplied, it does not give back to the egg the other matter that has been evaporated, and the chicken will plainly show the result.

When it is necessary to keep eggs they should be kept cool, as the evaporation is much less than at a high temperature. They can be kept in a cellar, or even in a

cooler. The best temperature for keeping eggs is from 45 to 50 degrees; the evaporation will be much less than at a higher temperature, and the temperature may be kept nearly at freezing without injury to the germ.

Slightly turn the eggs once in two days while keeping. If turned oftener it is likely to float the albumen, causing the chick to grow fast to the shell and be destroyed.

EGGS.

Eggs produced under the Narsh System find a ready market and always at an advanced price. People who buy eggs soon learn that they are sure to get fresh eggs and they are ready to pay more for them. One reason why eggs are low-priced in summer is because so many go to market in a condition that approaches spoiling. For this reason people do not use as many eggs as they would if they were sure they were getting strictly fresh eggs.

Where eggs are produced under the Narsh System, the merchant who can secure them will pay you several cents above the market price, and he will consider himself lucky for securing them. He informs his customers that he has them and guarantees every egg, and the demand for the eggs grows very rapidly.

HOW TO PRODUCE EGGS.

Put your hens in the coops, feed them the proper material to make eggs; the hens cannot fail to produce them. The egg ovaries are in the chick when born. They are so small that a powerful magnifying glass will only show a cluster as one tiny speck, but they develop to be

a cluster or batch of eggs. These batches develop one batch at a time; the others seem to lay in a perfectly dormant condition, the cluster that is developing must be supplied with the elements of which the egg is composed, and if not the ovaries or cluster is blasted. On the other hand, if all the elements are furnished the cluster they will develop and the egg will be produced. The clusters vary widely in number, some clusters developing only 10 or 12 eggs, while others as high as 40. When all of the cluster has been developed there comes a rest period with the hen and it requires about a week for the first egg of the next cluster to be produced. This seldom varies, unless for some cause or other the cluster has been blasted. The cluster may be blasted at any time during the developing period. If the hen receives a slight injury, the balance of the cluster will be blasted. The next cluster will come forth for development, but if the hen has not fully recovered, the second cluster will also be blasted.

LAYING HENS.

It is conceded by all poultry men that a laying hen will do her best when confined to a small space. The Narsh System gives ample space in each section of the coop for a hen to get plenty of exercise, allowing six hens to the section. The perches are quickly put in place at night and as easily removed in the morning, requiring a very few minutes of time.

Hens enjoy, to a certain extent, being in flocks; yet when a number are confined in a small yard they become dissatisfied and become "scrappy," often fighting like cockerels. They often injure themselves, and such an in-

jury, even though slight, will check the egg production. Like people, poultry is affected in disposition if not in perfect health and comfort. The stronger impose on the weaker, get the most of the food, and the result is disastrous to the flock. By the Narsh System, enough hens are kept in a section for company; they all have an equal chance to eat and drink; and if for any reason it is desirable to remove one of the flock, it can be quickly and easily transferred to another coop.

One cockerel is suffucient for two sections, or 12 hens, transferring it once a day from one section to the other. The cockerel, as a rule, is indulgent to the hens, and will allow them to eat nearly all the food, so that if fed with the hens he either doesn't get sufficient nourishment, or the hens are overfed. To avoid this it is better to feed him outside the coops, either in the open or in a separate coop reserved for the purpose.

As stated before in this writing, an egg is composed of different matter. The hen must take into her body such food as contains this matter. For instance, hens require a certain amount of meat to produce eggs. The poultryman is aware of this and feeds his hens meat in what he considers the proper quantity for the number of his flock . The hens are always eager for the meat. The meat alone will not produce eggs, as other elements are lacking. The stronger and more greedy hens get the larger portion of the meat. The result is they will not eat the other food necessary to make the egg, and no egg is made. The weaker and slower hen cannot produce the egg for the lack of meat. The hen will produce eggs when she has taken all the elements into her body required to make an egg. In this system, where the proper

feed is furnished, they will all get the proper quantities. You will then realize that a hen is an egg machine worth having.

WHEN TO COMMENCE INCUBATING.

By starting the incubator in December, so as to have your first hatches come off about the 15th of January, you can have broilers ready for the market by the first of March. At that time there is a market for 1 1-2 pound broilers, which will bring 50 cents apiece and perhaps even more.

INCUBATION.

The first important part is to secure eggs from hens that have been properly fed. Such will be found much more successfully hatched than eggs produced when improper feeding has been done. The proper feeding has been fully outlined in this book. In incubation, the first week is the most important and demands the greatest care. Too much cooling or too low a temperature during the first week is apt to prove disastrous to a hatch, and if not fatal to the chicks, often shows the effects in the development of chicks with crooked toes, crooked necks, or other malformations. After the first week they will stand much harsher treatment.

The first twenty-four hours will be required to bring the eggs to the proper temperature; they should not be subjected to sudden heat. If it has required the full twenty-four hours to bring the eggs to the proper temperature, so much the better, as you are quite safe in stopping or holding the proper temperature without the

heat running too high the last few hours.

At the end of the first week the blood vessels have formed, resembling a net work of veins, and the circulating blood helps to keep the proper heat within, and the eggs will stand more airing or cooling. The temperature during the second week should be raised to not exceed one hundred and three degrees and the eggs should be cooled about five minutes once during the day. Care should be taken in ventilating the room to be sure that all odors from the lamp have been removed, as the cooling of the eggs causes a contraction, which draws air through the pores of the shell, and if the air is impure it will affect the developing chick.

Keep the temperature as nearly as possible at 103 degrees during the remainder of the hatch, cooling the eggs from five to seven minutes each day in a room where the temperature is from 65 to 70 degrees and if the temperature is higher in the room, cool the eggs two minutes longer for every degee above 70 until ten minutes has been reached.

SUPPLYING MOISTURE.

As before stated, fresh eggs will not need any moisture supplied, but when they have been kept for some time it will be necessary to supply moisture while incubating.

Here we will first explain the effects of moisture upon the hatch, giving the reader a better idea as to the amount of moisture, if any should be supplied. Moisture will cause the chick to grow large and if too much is applied the chick will grow to such a size as to be crowded in the shell, causing it to smother before it is

able to crack the shell. The last ten hours of the chick's confinement in the shell is the time that the yolk is absorbed, and after the absorption of the yolk the chick turns clear over in its shell. It must then soon get air or it will smother. If it is too large to turn in the shell it will not be able to crack it and free itself. In eggs that do not need moisture supplied, the chick will not grow so large, will have more room to turn, and will be more able to bring the legs as well as the beak to bear on the shell and crack it without injury. Where hens are set on the ground the eggs will get too much moisture, unless the ground is exceedingly dry.

HOW TO SAVE THE CHICKS BY ASSISTING THEM FROM THE SHELL.

Many chickens are lost that could easily be saved if the following instructions are carried out: First, make an opening in the large end of the egg with the point of a penknife, sufficient for you to locate the chick's beak, then make a small opening at the point of the beak, using care not to let the point of the knife come in contact with the chick and cause injury. After the last opening is made, a small three-cornered file will be found useful in weakening the shell around the center, but do not allow the file to cut through the shell. The egg should then be put back in the incubator or the nest to finish hatching. The shell should not be pulled off, but it should be allowed to free itself after the above assistance has been rendered.

BROODING THE CHICKS.

It is unnecessary to supply artificial heat, and the chickens are more often than not injured by it. They will do better, even in the dead of winter, with the mercury registering ten degrees below zero, if our system is used. There is sufficient heat born in the chick, if it be properly retained. If, in the dead of winter, there should be as many as 75 chicks put in one brood coop, if you have that many hatched. They should be taken from the incubator as soon as dry. If the temperature is more than 10 degrees below zero, put 40 chicks in the brooder, or incubator as soon as dry. As soon as the mercury has risen above zero, leave only about 50 to the brooder, and as they grow to two or three weeks old it will be necessary to reduce the number to 40. If the chicks are found to be warm when the hand is passed through the nest, the inner part of the brooder nest may be removed. This should not be done the same day as the number is reduced, however, as the change will be too sudden, and the chicks are likely to catch cold. These changes should be made when the cold weather is decreasing. The floor of the brooder should be covered with sand and on this a layer of chopped straw to prevent chilling.

When the chicks have passed the first week of life and are in good condition, they may be considered safe and are ready to receive nearly all kinds of food that can be secured. Give them bulky food (such as alfalfa meal or cut clover) to expand the craw. The rapid growth of a chicken depends almost entirely on the amount of food it can be induced to eat.

The last feeding at night the chickens should be given a variety of whole grain, excepting corn, which

should be cracked. When they can be induced to fill the craw well at night they are doing well, but if they fail to have the craw well filled there is something lacking, and they should be tried with something new. It is best to give a slight change every day at the last feeding, making cracked corn a staple. For example: cracked corn and whole wheat; cracked corn and whole oats; barley and kafircorn. By making these changes the chickens will be induced to eat more than if the entire mixture is fed at each feeding, and there will be a correspondingly fast growth and greater development. Whole oats should be put to soak in water in the morning before feeding, allowing them to soak until one-half hour before feeding time, and drain for a half hour. For chicks under three weeks of age, if oats are fed they should be crushed. The morning food should be principally composed of cornmeal, wheat bran, wheat millings, seasoned with a little salt, and moistened with skim milk, if the milk can be had; if not, with water. If water is used do not make the mash too soft.

It is needful to use great care in brooding chicks. And to that end we have devised a brooder, description and cuts of which are presented herewith, which, if instructions are followed, will prove of great value in the first care of the chicks. In proper or improper brooding lies largely your success or failure.

Using artificial heat has proven very unsatisfactory, though it has been used for many years. Most poultrymen are beginning to realize that stronger and better chicks can be raised when artificial heat is dispensed with.

Do not be in too big a hurry to remove the chicks from the incubator—be sure they are thoroughly dry. Remember that you are taking them from a temperature of 103 degrees to a much lower temperature, hence it is necessary that the brooder has been carefully and properly prepared. If the weather is cool or damp, carry the brooder tray into the house and warm it for a few hours. Spread newspapers in the bottom of the tray to keep out any cold air from beneath; then spread prefectly dry cut straw or loft litter, sufficient to make a good nest. Place the inner brooder frame in the tray, working it well down into the litter, to insure no draft around the lower edges. Be sure that you place the inner frame exactly in the center of the tray so that when the outer frame (or cover) is placed, the air space between, filled with dead air, will be equal on all sides. This dead air chamber allows a gradual escape of the air inside, at the same time filtering in sufficient fresh air for the chicks, and keeps the temperature even.

It requires six times as much air for birds as it does for other species of the animal kingdom; for this reason, do not attempt to substitute an inverted box or any other material to take the place of the canvass-covered frames.

When the brooder has been thus prepared, place the chicks in it, keeping the brooder in the house or incubator room for several hours to make the change more gradual, then place in the coop.

When you have placed the blanket frame in the inner brood frame, adjust it quite low to prevent too much air over the backs of the chicks, and close the door opening with a handful of straw to keep the chicks from getting out until they have been in the coop several hours.

If it is a winter hatch, do not be in too great a hurry to feed, allowing them to stay in the brooder undisturbed for 36 hours or even longer. When you do feed, scatter the feed in the open coop, remove the straw and allow them to find their way out, and there will be no trouble about there finding their way back in. If placed in the open coop first it will require time and patience to teach them to go into the brooder at night.

The blanket frame prevents crowding and the tramping on the weaker by the stronger. Be sure to keep the litter off the floor dry, for if the chicks get cold feet they will try to get on top of each other and the weaker ones will be killed or injured.

People often ask us what is the matter with their chicks, saying they are weak and often two or three die in a night. Nine times out of ten it is because they have a damp place for their feet, with the results described above, and often a man decides that his flock is the victim of cholera, roop or limber-neck, or some other malady, when in reality his chicks are being trampled and smothered because of poor brooding houses.

Make a Narsh brooder and use it as here directed and the failures of the past will become the successes of the future.

FIRST FEED.

The following system is contrary to many writers, but we have proven it by long experience to be successful. Many poultry men claim that the chicken should not be fed for 24 hours after it is hatched, claiming that this time is necessary to digest the yolk that has been absorbed before hatching . But if the egg was

fresh and properly incubated the yolk will digest very readily. If improper conditions existed either before or during incubation, the yolk will often become indigestible, and the chicken will die, although it may live several days or even weeks.

It is our experience that it is better to feed the chick as soon as it will eat, using stale bread that has been well baked and dry enough to crumble well; then soften with sweet milk and feed often, but in small quantities. Water should be given as soon as they will drink. The yolk of a hard-boiled egg, crumbled fine, will be good. Scatter small seeds in the sand; the chicks will learn to scratch for them when only a few hours old, giving them exercise and starting the blood to circulating freely.

The first week's feeding is of great importance to give the chick a good start in life. Lean beef scraps may be fed the second day, cut fine and given once a day. They are very fond of beef, and the writer has had surprising results from feeding pure lean beef scraps, from the beginning. Sweet skim milk will add very materially in developing both flesh and bone. Grits should be fed after the second day, or as soon as the chicks will eat cracked corn. If they are given the first day the chick will often eat too much, while the second or third day they have learned the value of the grit and will only take into the craw what is needed. When sharp, coarse sand can be had the chick will get sufficient grit. This will be explained under the subject of "Brooding."

FRESH AIR NECESSARY.

Air is the most essential of the three requisites for life, namely, air, water and food.

Therefore, little chicks must breathe pure air. Pure air, pure fresh water, and pure food and no disease will bother your poultry.

A large per cent of the chickens hatched die in brooding for the want of pure fresh air. On the day I am writing this article I made a personal visit to two different chicken ranches to see the condition of the chicks, and the operators in both instances reported a heavy loss in the chicks after they were put in the brooder. One gave the cause, in his opinion, that it was impossible to get eggs in this country from hens on the range at this time of the year that would produce a good chick. He had a hatch of about 40 and they were put in the brooder one week ago today, and today there were 14 only living, and they were not healthy looking and doubtful as to raising. I found about the same results at the other ranch. In both cases they were brooding alike—had the chicks in expensive brooders with the air shut off. About the same date that the chicks above mentioned were put in the brooders a lady delivered 33 chicks, hatched by hens on the range and very close to where the eggs said to be the fault of the losses mentioned came from. My chicks are 7 and 8 days old today. I have not lost one, neither have I had any signs of sickness among them. Where the losses occurred the chicks were in expensive brooders, costing hardly less than $10 apiece. My chicks are in a section of my system.

When chicks are brooded under my system the loss of one chick is a rare thing. Out of 98 chicks that I

have bought, I have not lost any, while all of the poultrymen whom I have talked to (and I have talked to a number) report from 50 to 75 per cent loss. The feeding has been very similar, as they all feed young chicks about alike.

RAISING BROILERS.

As soon as the chicks are dry they should be taken from the incubator and placed in the brooder in a section of the coop. If they are first placed in the open coop it will require some time and trouble to teach them to go into the brooder, whereas if they are first placed in the brooder and kept there a short time they will go back into it without further trouble.

The construction of the coops allows of perfect sanitation and plenty of pure air which, with proper feeding, brings the broiler to a high state of perfection, giving it a ready sale at a good price.

Broilers weighing two pounds should be produced in eight weeks. When they are six weeks old, stop feeding wheat bran and let midlings take its place in the morning, adding about one-eighth part linseed meal. This mixture should be fed three or four times during the day, also feeding all the cracked corn that they will eat. Fatty meat scraps may me fed while fattening.

CRAMMING.

For best results a machine is necessary, especially during the last ten days, for otherwise the birds will not eat nearly as much as they can digest and assimilate. For this purpose a machine, an illustration of which is shown elsewhere in this book, can be made or purchased at a reasonable price. This cramming method will add materially to the quick growth of the bird and will add a pound to a pound and a half to what it will otherwise attain in weight. By this method also, chickens may be brought up at market price, fed for a few days and sold at a good profit.

At a certain New York establishment the birds are fed as follows during the cramming period. 100 pounds finely ground barley; 100 pounds finely ground corn; 100 pounds finely ground oats, with hulls sifted out, to which mixture is added 10 per cent of beef scraps. Buttermilk or skim milk is used for mixing, the former being preferred. A little salt is sometimes added and the birds are fed twice a day at intervals of 12 hours and are crammed for three weeks. Another ration that can be recommended is 100 pounds ground oats, 100 pounds ground corn, 50 pounds flour and 4 pounds tallow.

CAPONS.

A capon is a castrated male bird. Caponizing will make a bird more quiet, the comb and wattles cease to grow, the plumage becomes heavy and the bird fattens more readily. They neither crow nor fight, and have been sometimes known to rear a brood of chicks. They weigh from 10 to 12 pounds at a year old and bring a good price.

The following extract from Bulletin 287, Poultry Management of the U. S. Government, is instructive along this line:

"Fowls hatched early in the spring can be caponized before hot weather comes, which is an advantage, although no ill results should follow the operation at any time of the year if it is properly done. Generally speaking, the bird should be from 2 to 3 months old and weigh about 2 pounds, depending largely on its development. A good set of tools is indispensable and can be purchased for from $2 to $3. As a complete set of instructions is furnished with each set it is unnecessary to go into details here. The beginner should, however, operate on several dead cockerels before attempting to operate on a live one.

After caponizing, the bird should be given plenty of soft feed and should have plenty of water to drink. The capon begins to eat almost immediately after the operation is performed, and no one would suppose that a radical change had taken place in his nature. Leave him to himself, as for the time being he is his own doctor. It is well, however, to look him over two or three days after the operation has been performed, for sometimes air gets under the skin, causing a slight swelling, or 'wind puff.' This can be relieved by pricking through the skin at one side of the swelling with a sharp needle and gently pressing out the air with the hands. The wounds will heal within ten days from the operation. The capons should be fed nourishing but not fattening feed, the object being to keep them growing. They should be allowed to grow until about a year old, depending of course largely on their maturity, some breeds maturing much more rapidly than others."

RANGE CHICKENS SLOW TO MATURE.

It requires three or four months to develop a broiler on the range. During the summer they usually eat too many poisonous bugs and worms, retarding their growth and laying them liable to the many diseases that chickens are heir to. They often contract bowel trouble of such a character that they never recover.

It is a great mistake, and becoming more and more so acknowledged, for poultry raisers to think that chickens do better when allowed to roam at will on the range. There is loss on every hand—slow maturity; various diseases; lice and mites; loss from rats, cats, dogs and hawks; poor egg production; loss in hatches caused by eggs chilled on the ground—losses that would more than cover the cost of feeding were they properly housed. Narsh System chickens are as far ahead of range chickens as the Kentucky thoroughbred is ahead of the cow pony of the plains.

PROFIT IN SETTING HENS.

I am now preparing to breed a strain of setters. A hen will hatch 15 chicks. We can cut it down to 12 and let us do some figuring. We will place the value of the eggs at 25 cents per dozen. At that price the 15 eggs would be worth about 32 cents. You will pay 10 cents apiece for chicks as soon as hatched—that is, hen-hatched chickens. At that price the 12 chicks would bring $1.20. We will allow 6 cents for feed, as a setting hen can be fed for 2 cents per week. This would make the cost 38 cents, leaving 82 cents profit for the hen for five weeks, as we will allow her two weeks to develop ovaries and com-

mence producing eggs. During the time the hen is of little or no trouble to speak of, and I have not estimated the results too high where my System is used. I do not wish to be understood that good results can not be obtained by an incubator. A properly constructed incubator in the hands of a careful person, skilled in the handling, will bring good results; but if not in the hands of such a person I would much rather have hen-hatched chicks. If the incubator has not been properly handled even a reasonably good hatch will show the bad effects.

You are reasonably sure to raise a hen-hatched chick. Placing the first cost at 10 cents, you can feed the chick until it is a two-pound broiler for 10 cents and pay highest market price for feed. Under this System, I will leave this to my reader to figure out what per cent his profit will be on his investment.

HENS FOR HATCHING CHICKS.

Hens will bring good results when set in the coops. One section will accommodate three hens nicely, one in the nest and one in each end. All laying hens should be removed from the section to be used by the setters, and if the hen which produced the eggs was properly fed you may come pretty nearly counting your chickens before they are hatched. As soon as the chicks are hatched put them in the brooder coop, and the mother hen will soon be producing eggs again.

KEEPING PULLETS FOR LAYERS.

When your chickens have reached broiler size your cockerels should be marketed excepting those you want

to keep for breeders and those should be placed in a section by themselves, as the young cockerels will continuously torment the young pullets and retard their growth.

PROFIT IN THE PRODUCT.

Many poultrymen claim the greater profit is in marketing the eggs. I would have agreed with them until I discovered how to raise broilers. It has been always taken for granted that chickens could not be raised to broiler size without a large per cent of losses; first, losses in eggs not hatching; second, but not least, in raising the chicken after hatching. Now that I am sure that the chicks can all be raised, I do not hesitate to say that the broiler yields the greater profit. That word all will sound bold to many, but I mean it.

THE ADVANTAGES OF THE COOP SYSTEM.

The fowls are supplied with an abundance of fresh air; they are kept from the dampness of the ground; they have the association of a large number, making perfect contentment, yet are divided, which protects them from injury when feeding by the stronger ones trampling down the weaker ones, and from getting too much of one kind of food which they particularly like and the weaker ones not enough.

A hen must be in perfect health to produce eggs. When a laying hen has been injured she will stop laying at once. For example, a hen may be in the midst of her egg-producing period and have a toe bruised or severed. She will only lay the one egg, which was all ready hard when the injury was received. All the unmatured eggs will be absorbed and the hen will not begin to lay again until she has fully recovered, and it will then take some time for the hen to develop new ovaries and commence laying. This accounts largely for a small flock of hens producing more eggs than a large flock, pro rata. If a well bred hen does not produce eggs continuously, except her rest periods, which are one week, and seldom varies from the time the last egg of a litter is laid until the first egg of the new litter is produced, and should the hen fail, you may know something is wrong. If she is not moulting she has been injured, or has not had proper care. If hens are kept in a large flock and roost in barn or sheds, they soon become polluted with lice and mites. These pests find their breeding places in wood coops, barns and sheds; they multiply very rapidly in dark places, and where fresh air cannot strike them. Plenty of fresh air and light will exterminate the mites

entirely. No lice or mites will be found where my new coop system is used. Where buildings are used for housing poultry it is necessary to have openings for ventilation. These openings cause a draft and the result is your hens will take cold much easier than they would in the open air. By my system the cold wind can be shut off from any direction and at the same time allowing plenty of fresh air and light at all times.

The entire system can be changed from a cool summer coop to a warm winter coop in five minutes, and is warm enough that chicks one day old may be placed in the battery in perfect safety without artificial heart when the thermometer is 10 degrees below zero. This may sound strange to many who have not seen the system, and it will no doubt be considered by many as impossible to brood chicks in dead of winter without artificial heat. The facts remain the same, chicks will do better under this system taken from the incubator as soon as dry and placed in the brooder coops, and will do better than chicks in a brooder supplied with artificial heat.

Hens will produce eggs in winter as well as summer if the proper conditions exist. They must be protected from the damp and cold and at the same time have plenty of fresh air and light. A hen is far more profitable when she will produce eggs in winter. Broilers hatched in midwinter will develop into two-pound broilers in from seven to eight weeks, bringing as much on the market at this age as full-grown chickens will bring hatched in the regular hatching season. Your laying hens must have the proper attention to produce the eggs for winter hatching.

HOW TO LOCATE THE NARSH SYSTEM OF COOPS.

It will be best to locate the coop facing the east, as this allows the morning sun to come direct on the run, or large trays. This enables the chicks to take a sun bath in the early morning sun, which is very beneficial to the young chicks. This brings the small tray on the west side of the coop, where the last sun rays strike the brooder and helping to freshen and warm it up for the night.

These coops should be cleaned at least once a week. It is necessary to remove the sand pans, empty them, replace and refill them. This would be a little heavier work than the ordinary woman will care to do. If the husband will get up a few minutes earlier in the morning and while the wife is cooking breakfast, two or three of the coops can be cleaned and the same in the evening; the rest can be easily accomplished by a woman. As a rule the woman is more successful, as she is apt to look closer after the small details of the plant, which are necessary, that a man is more apt to overlook.

ONE COOP FOR OLD AND YOUNG.

The Narsh System of coops are so arranged that they can be easily adjusted to accommodate both old and young, making both comfortable. (See illustration and description for manner of wiring.)

The curtains are arranged to drop from the top of the coops and can be lowered so as to cover one, two, or all of the sections, as desired. If young chicks are kept in the same coops with the older fowls, it is therefore de-

sirable to keep them in the upper sections, because conditions sometimes demand protection for the young while the older ones do not need it. For instance, a small chick easily chills in a cool, damp wind that doesn't affect the hardened older ones, retarding its growth or even proving fatal.

INJURIES RECEIVED BY IMPROPERLY CONSTRUCTING COOPS.

It is important that I again impress upon my reader's mind the necessity of protecting your birds from injury, for as before stated, a hen will cease to produce eggs if suffering from injury, though it may be very slight. Hens often get bruises on their feet, caused from jumping from high roosts and alighting on hard ground or floor often causing abscess on the bottom of the feet—and while the hen is suffering she will not produce eggs. If you have the opportunity to examine the feet of fowls which are kept in buildings with high roosts you will find many bruised feet, and the egg production from the flock will show the results. Such methods should be improved upon. Many writers tell you of the bruises and cuts and tell you of the effect on the egg production. They have their ointments and itch to sell it to you as a cure. I am thoroughly convinced that prevention is worth more than a cure. The ointments may aid in the recovery of the present wound, but will not prevent the next one. A laying hen should not be kept where she can exert herself by jumping from high roosts. Far better results will be obtained where the perches are not over three inches high, or just high enough to keep the fluff feathers from becoming soiled.

Hens are often crowded off from high perches and not only injuring themselves, but often causing others to fall and receive like injuries.

In my system there is a remedy. A greater number of hens can be kept in the same space as the general poultry house now in use. The hens need not have over three inches to step up to get on the roost and no danger of others crowding them off. Where six hens and one cockerel are kept in a section of the Narsh System it is impossible for them to receive any of the above named injuries. These facts aid very materially in the increased egg production.

GREEN FEED FOR WINTER.

It is very essential that laying hens should have greed feed in winter. Cabbage leaves, potatoes, turnips, onions, in fact most any vegetables are good for hens in winter. Small potatoes ofttimes can be purchased at a low price in the fall. They form a good food, either raw or cooked. Lawn clippings stored where they will dry in the shade, are an excellent substitute for vegetables in the winter. A mixture of cooked potatoes, alfalfa meal, wheat bran (add sweet or sour milk, if you have the milk), seasoned with salt and pepper, makes a good mixture, and will be relished by the hens. The alfalfa meal should be put in a vessel and boiling water poured over it. At night cover with something that will retain the fumes and in the morning mix with bran. Corn meal makes a very inviting breakfast. When the alfalfa or ground clover has been treated as above mentioned it is nearly as good as green cut, the water having softened the hard stalk, making it much easier to digest. Sprout-

ing grain, oats or rye are good green feed producers. Place the oats or rye in a vessel to soak over night. In the morning place them in a box that will let them drain, sprinkle night and morning with a sprinkling can, turn them over every two or three days and they will form a sod. In from eight to ten days they will be ready for feeding. This method of securing green food for winter is easily done and forms not only a cheap food, but a great egg producing food, and is excellent for the early chicks. When feeding to small chicks they should be fed before any stalks have been formed, as they get too tough for the little fellows to pick off. If fed when the sprouts are about two inches long they will eat them all up.

I know of no crop that will produce such returns in green feed for poultry as Dwarf Essex Rape. You can sow it at any season of the year, wet or dry, hot or cold. Frost does not hurt it. It makes a good growth anywhere; the plants soon rival cabbage in size and make the best of food.

A delicious article of diet from a chicken standpoint is ensilage made of lawn clippings. Take a sugar barrel and each time you gather your lawn clippings put them into the barrel and then moisten. Then place a board with a heavy weight on top the moistened grass. As you gather the clippings repeat the same operation until the barrel is full. This ensilage will keep sweet indefinitely and makes a fine feed during the winter. Freezing does not hurt it.

MOULTING.

The moulting season usually begins in August and the duration varies widely. There has been a great deal of writing on this subject by poultry men from different parts of the country. The season for moulting as well as the duration of the moulting period differs widely in different localities. While these differences exist, I am fully convinced that there is but one solution to the problem, and that is, the hen must have the proper material supplied in the way of food to make feathers, and the duration of the moulting period depends fully upon the amount of fiber-making material the hen can get or be induced to consume.

Some writers on the subject are of the opinion that the hen can be fed in such a manner as to produce eggs as well as make feathers. This has been accomplished to the extent that a hen will produce from one to two eggs per week during the moulting season, but where this has been done egg producing feed must be forced and the result is that the moulting period is extended. My experience has caused me to believe that better results will be obtained by placing the hen on a strictly fiber diet and get through the moulting period as quickly as possible—do not be alarmed at the loss of flesh during this period. The flesh will be rapidly replaced as soon as the fowl has regained her plumage, and will soon be producing eggs. It is well for us to understand something about the material the feathers are composed of in order to enable us to supply the fowl with the necessary material. All feathers are about the same composition—carbon, 52.5 per cent. This element can be supplied best in charcoal—the fowl will readily take this into the body in moulting season. Carbon also exists in mineral sub-

stances, such as limestone and the hen should be supplied with plenty of grits of this character. Hydrogen, 7.2 per cent. This element is also supplied by the mineral substance supplied in the grits. 17.9 nitrogen. This element is taken from the atmosphere. 22.4 oxygen, and sulphur. The former is present in most all food material. The sulphur should be supplied pulverized. Charcoal should be fed plentifully and may be mixed in a bran mash, adding a little sulphur. Wheat bran is a good fiber food, also alfalfa meal or ground clover. Fowls will be droopy during the moulting period, but when the plumage has been regained they take on new life. As above stated, my experience has convinced me that the best results will be obtained by leaving off the egg product during the moulting season, but hasten the period by the following diet: Alfalfa, cut or ground, or clover. Charcoal, crushed, can be mixed with wheat bran, adding a heaping teaspoonful of sulphur to every six fowls, the sulphur feed only two weeks, twice a week. Charcoal, alfalfa, wheat bran, salted as food should be seasoned for the table should be fed twice a day. Dry alfalfa, dry wheat bran and whole oats should be before them all the time.

DISEASES.

I know something about diseases of poultry, but I never regarded it very profitable to doctor sick chickens. It has always been my theory to hunt up the cause of the sickness and go after that. A chicken that is suffering from disease is better buried or burned than it is running around. For this reason I believe prevention is worth more to my readers than cure.

Fresh air is the best tonic the poultry keeper can give his fowls. It is cheap and the supply is unlimited. Filth spells "failure" every time; in keeping poultry from vermin an ounce of prevention is worth a pound of cure.

Fresh air is the preventative, but not when distributed through cracks and knot holes.

ROUP.

This disease is probably one of the greatest hindrances in the poultry business. There is scarcely a poultryman who has not had his experience with this disease. When roup once gets a foothold on a fowl it is very hard to break it up; the fowl will never be entirely well after it has once become contaminated therewith, and months after you think the fowl is in perfect health if you pick the bird up you will find out that it is very thin and unfit for egg production or breeding purposes, still the bird has been eating just as much as any other member of the flock, still it is "thin." This is what we term "roupy" fowls.

The primary cause of roup is a cold, which may be contracted in different ways. It generally starts from the fowls roosting in drafts, exposure to cold rains or disagreeable weather, overcrowding and using poorly constructed houses kept in a filthy condition.

GAPES.

Gapes is caused by the chicks picking up a small hair-like worm found in the soil. The chicken swallows them and they crawl back into the throat and get into the windpipe and often kill a large per cent of the chicks. There will be no gapes where the Narsh System is used.

LIMBER NECK.

Limber neck is very similar to gapes, and is caused by chicks feeding on some decaying carcass where maggots are present. The maggots eat through the tissues or lining, causing what is called limber neck, and also causes death to the chicken. There are many remedies advertised, but in my judgment when chicks are afflicted with either disease it renders them worthless to raise, as they never become a strong fowl and only strong, healthy fowls are profitable.

The presence of these diseases has stimulated me very much to study out the remedy, and the remedy is, place them in the battery coop system, and there will never be a case of gapes or limber neck.

EFFECT OF MITES ON POULTRY.

Many a poultryman finds something wrong with his flock, but he cannot tell what it is. He examines for mites and doesn't find any; he takes it for granted that mites are not the trouble. Something else is wrong. Yet the chances are that it is mites.

Mites do not stay on the fowl in the daytime. They will be found in the roosting places in large numbers unless you are constantly fighting them. They do their work at night by sapping the fowls and causing unrest during the night and then go back to their hiding place where it is dark. I have found mites hanging in rope-like clusters where it was believed none existed. You are sure to find them where fowls roost in buildings where the mites can find dark places to hide. In the Narsh System there is no place for them to hide or keep out of the circulating air. Light and circuating air will exterminate them from your fowls.

A FEW WORDS ON PERCHES.

A perch (or roost) should be slightly oval, as it is natural for fowls to curve the feet and toes. Where a flat surface is used, with sharp (or square) corners, the hens do not rest as comfortably, and often get corns on the feet. Oval strips, known as 1 1-2 ovals, can be secured at any lumber yard. If half round is used, 2-inch half round will not be too large.

STARTING IN THE BUSINESS ON RENTED PROPERTY.

In my System I have combined a complete poultry plant, especially well adapted for housing and yarding poultry of all ages, from the day they are first hatched, at all seasons of the year and in all weather conditions, from the hottest days in summer to the coldest days in winter.

With this System it is possible for people renting property to raise as fine poultry and with an equal, if not greater, profit than the farmers with unlimited range. At a day's notice, without handling or injuring a single hen, he can locate his plant many miles from his original site.

Many people hesitate to start in the poultry business, not knowing whether they are permanently located or not, and fear that their investment in poultry house would depreciate and they would get little or nothing back.

In my System you will not find it so. Should you wish to discontinue the poultry business you will find a ready sale for your entire plant without loss, as all of the System is good for many years and can be moved as easily as any article of household furniture.

INDEX

The Narsh Poultry System ..... 3 to 7
Southwest for Poultry 8
Why Middle Aged Men Should Start in the Business 9
A Growing Business 10
Poultry More Profitable Than Other Stock 11
First Steps 13
Selecting Pullets for Breeding Broilers 15
Broilers Raised by the Narsh System 16
How to Feed Breeders to Secure Hatchable Eggs 16
Fertility 17
Composition of Eggs 18
Care of Eggs to be Incubated 19
How to Produce Eggs 20
Laying Hens 21
Incubation 23
Supplying Moisture 24
Assisting Chicks from the Shell 25
Brooding the Chicks 26
First Feed 29
Value of Fresh Air 31
Raising Broilers 32
Cramming 33
Capons 33
Range Chickens Slow to Mature 35
Profit in Setting Hens 35
Hens for Hatching Chicks 36
Keeping Pullets for Layers 36
Advantages of the Coop System 38
How to Locate the Coops 40
One Coop for Old and Young 40
Injuries from Improperly Constructed Coops 41
Green Feed for Winter 42
Moulting 44
Diseases 45
Mites on Poultry 47
Perches 48

On the following pages are given full details of the Narsh Coop System with illustrations.

CUT No. 1

Shows front view of Coop complete, except curtains—front doors slide either way, allowing access to either side of tray—Front doors of first and third doors opened to receive drop boards.

DESCRIPTION OF DROP BOARD OR ROOST: Drop board should be 12 inches wide and be made from some thin lumber which will be light to handle—empty dry goods boxes can be usually secured at a small cost and make very good bottoms; it is best to put cleets across the bottom to prevent warping or splitting—two-inch oval or two-inch half round make the best roosts and can be secured at most any lumber yard—1x2-inch can be used, but should have sharp corners taken off; the fowl will be more comfortable when roosting on a slightly curved surface. Cut two blocks 1x2x3 inches long, nail them to the drop board in the manner shown by the one setting directly in front of coop; these drop boards, or roosts, are placed in the coop at night and removed in the morning and are easily cleaned by the use of a wooden paddle The cut shows the attendant cleaning the drop board—the instrument he is using is the blade of an ordinary garden hoe, which has had the shank broken off and holes punched in the blade and riveted to a handle, and does the work very nicely—a ten-cent fire shovel does the same work.

When the drop boards are cleaned the fertilizer should be placed in barrels or boxes and kept dry until wanted; do not waste your fertilizer, as it is valuable and much sought after by the eastern gardeners and fruit growers, often bringing from 20 dollars to 25 dollars per ton—the value is more when procured from the drop boards.

No. 1

CUT No. 2

This cut shows rear of Coop with curtains rolled up in the small or back tray; on top floor will be seen a Narsh brooder. This brooder and brooder tray is separated from the larger tray by a partition wire with a small sliding door which slides perpendicularly and can be seen in this cut—3rd floor, or where attendant is holding back door open. The small or back tray is called the brooder tray but answers for a nest tray or dust pan for laying hens.

The small tray is removed from the back when cleaning; the chicks are easily driven into the large tray or front part of coop and kept there by closing the small door; small tray can be removed without opening the back door—there is sufficient room under the door for the tray to be drawn out. The back door which the attendant is holding open, is a frame made of light material and covered with one-inch mesh poultry wire having 4 small wire hooks stapled to each corner in such a manner as to engage themselves to 4 small screw eyes—the door can be opened either way by raising one end out of the screw eyes, allowing the other end to engage, or, by raising entire door up it is easily removed entirely.

Small or Partition Door.

This door works freely upward and downward in two slides. Slides are made using three pieces of lath, the inside lath being ripped in the center, making it only half as wide as the other two; the narrow one being placed between the whole laths forms a groove for the door to slide in—be sure to select a lath thick enough to allow the door to slide up and down easily. The slides are made right and left AND LEAVE THE OUTSIDE LATH extending far enough to nail secure to cross piece above the doors. The bottom of the slide is stapled to wire only and must

not extend downward quite to the tray. If so made your trays will be divided only by the partition wire; if the slides extend down below the top of tray the space between the trays will let a baby chick drop through.

No. 2

CUT No. 3

Shows coop with all trays removed and the slides will be readily seen in the last named cut.

How to arrange the opening and closing device: Drive a small staple directly over center of door, bore small hole in top of door to receive cord, pass cord through staple over door passing thence to outside of coop, drive staple or screweye to receive cord outside of coop and extending downward, tie end to nail in such a way as to be tight when door is closed, then catch the string about 3 inches up and pull down until door is open, then drive small nail leaving enough of head stick out to hold cord. Cut on opposite page shows these cords and will aid in arranging them.

Cut on opposite page shows frame with trays and doors removed, showing slats running from front to back, these slats are the supports for the trays. Note that they extend over the cross piece. This extension forms the slides for the front door to rest on. Cut Five, third cross piece shows the third or middle cross piece, fast to the tray and extends to form middle rest for door

NOTE the front uprights in this cut showing space for door to slide between.

No. 3

CUT No. 4

Cut on opposite page, shows how the Narsh System Coop can be used for both old and young chicks at the same time.

Place the baby chicks on the upper floors, and this will allow the curtains to be lowered to protect the baby chicks and at the same time leaving partially or fully open, the lower floors where the older ones may be placed.

Note the side curtains only reach forward to the inside upright. This is done to let the front doors open without rolling up side curtains—front curtain is made to reach around to the side and overlap side curtain—back curtain overlaps side also.

No. 4

CUT No. 5

Cut on opposite page shows brooder in back tray; also shows front doors partially open.

When chicks are hatched in winter, it is well to take out the wire doors and place glass doors in their stead. If frames are made for glass, make them enough wider to lap the cross piece above at least three-eighths of an inch; side pieces will necessarily have to be cut out a corresponding amount to allow the wider doors to be opened; where the glass door is used, the morning sun warms up the run (or big tray) and at the same time keeps out the cold air.

No. 5

CUT No. 6

Cut on opposite page shows cramming machine in operation.

See page 33.

Wiring is also shown in this cut. NOTE the right hand coop, also the middle coop is wired with what is known as Pittsburg welded wire 2x4-inch mesh. This Wire is best for breeding pens, as the cockerels with large combs can get their heads out to eat without injuring their combs—each floor will have to be wired separate if the Pittsburg Welded Wire is used for the sides—a good way to wire coops is to use 2-inch mesh poultry wire for sides, three feet wide, just fills the space of large tray; 1-inch mesh by 12 inches for sides of small tray space using 1-inch mesh by 5 feet wide for partition wire between the two trays; when wire of these sizes is used, coop can be wired from top to bottom with Pittsburg wire. Pittsburg Welded Wire can be used for the doors and feed hoppers hung on doors. This method will permit of outside feeding by hanging feed hopper on the door.

No. 6

DIMENSIONS OF FRAME

Cut on opposite page shows side of coop.

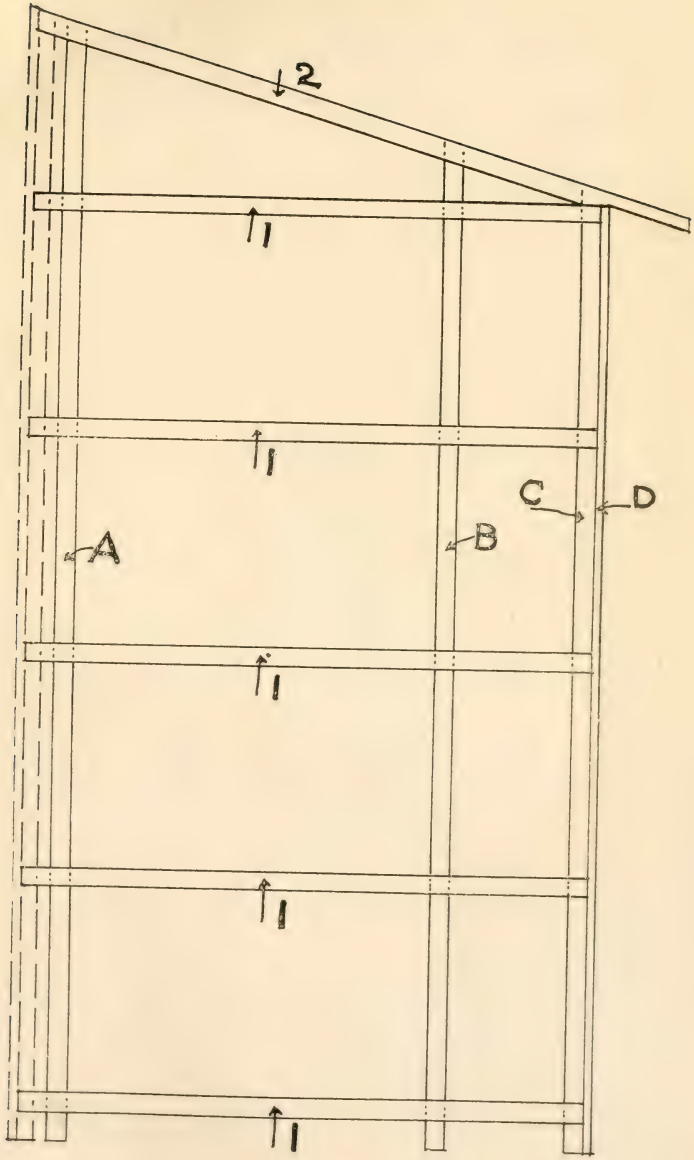
Make both sides alike, excepting one is right and the other left, that is, make the two sides in such a manner that the pieces marked 1 (one) come on the outside of the uprights, A. B and C. A is a 1x3 8 ft 8 in. long; C is 1x3 7 ft. 5 in. long; B 1x3 7 ft. 10 in. long.

Cross pieces marked 1 (one) 1x3 5 ft long and 3 in. from bottom; then 20 inches apart.

The sizes given here makes a 5 ft. 2 in. square coop which is a very nice size.

Large tray made to fill space between A and B; small tray to fill space between B and D. Make frame for trays of 1x2; make floor of tray out of matched lumber to prevent dirt falling through.

Extend Rafter No. 2 eight inches in front.


2
1
1
1
1
1
C
D
A
B

The Narsh Brooder is made of two frames made of ordinary building or plastering lath and covered with 8-oz. ducking.

Fig. 1 on opposite page shows the outside frame.

Fig. 2 shows the frame covered with ducking.

Fig. 3 shows the brooder blanket.

Fig. 4 shows the inside brooder frame with brooder blanket inside.

Fig. 5 shows outside and inside frames placed in the manner in which they are used.

Fig. 6 shows frames covered with the ducking (or cloth) covering cut away to show brooder blanket intact.

The two frames are made exactly alike except one is 2 inches larger than the other; the larger one is called the outside frame and is covered by tacking a strip of ducking around the frame on all sides and over the top.

The smaller frame is called the inside frame and is covered on all sides only leaving top open to receive the brooder blanket.

Brooder blanket is made of one strip of woollen or cotton flannel (former preferable for winter, latter for summer) having tucks sewed in at intervals of 3 inches apart and is tacked onto a lath frame as shone in cut (Fig. 3.)

The blanket frame is suspended by the four corners by the means of a cord or what is known as picture frame chain; drive a small finishing nail in each corner of inside frame to hook the chains over; by so doing the blanket can be adjusted to suit the weather and the growing birds. An extra blanket consisting of a tow-sack or some other cloth can and should be used on top of blanket frame to insure warmth over the back in winter. Care should be taken to see every day that baby chicks have not gotten on top of brooder blanket and cannot find their way out.

Make inside brooder frame leaving one-inch space between frames; this space will be filled with dead air and will keep a more even temperature on the inside.

Make outside frame to fill the brooder tray.

BROODER

Fig. 1

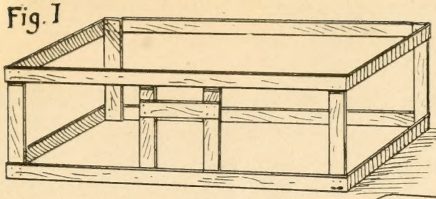


Fig 2

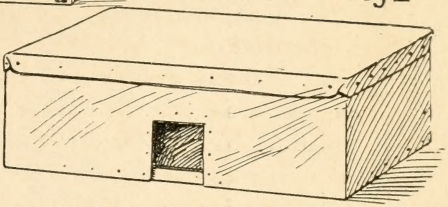


Fig 3

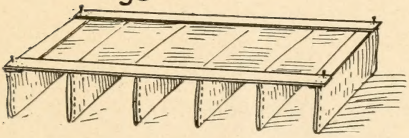


Fig 4

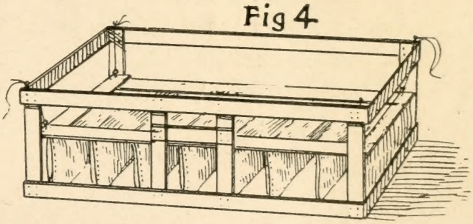


Fig. 5

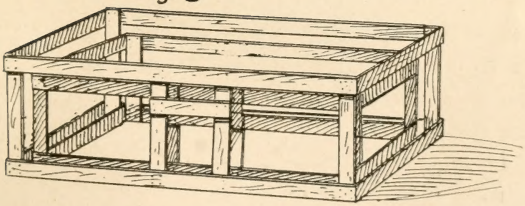
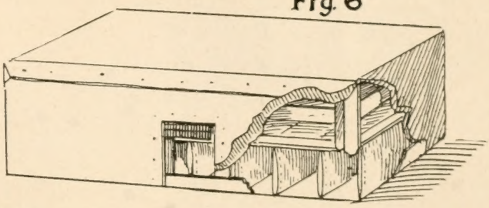


Fig. 6



FRAME WORK MADE FROM ORDINARY PLASTERING LATHS. COVERED WITH 6 OR 8 OZ. DUCKING

NOV 22 1910